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James Bus, Ph.D., DABT, Fellow ATS

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Professional Profile

Dr. Bus has over 40 years of toxicology experience focused on research and evidence-based literature analyses informing potential health risks associated with chemical and pesticide exposures. He offers chemical specific and strategic toxicology expertise addressing development, stewardship, and regulatory needs to individual industry clients and business consortia and government and non-governmental agencies.

Dr. Bus provides expertise in design, implementation, and interpretation of toxicity tests and mode of action and dose response/exposure evaluations furthering translation of toxicology findings to risk assessment. His expertise includes target-organ and endpoint-specific modes of action, and specific toxicity of chemicals including chlorinated organics, ethylene glycol and glycol ethers, aromatic derivatives benzene, styrene, aniline and others, and pesticides such as 2,4-D and glyphosate.

His research interests include toxicokinetic mechanisms mediating dose-dependent expression of chemical toxicity. He has over 120 research and review publications and has received both the Achievement Award and Founder's Award from the Society of Toxicology in recognition of his research and leadership in toxicology.

Dr. Bus' experience includes over 23 years as a consulting toxicologist in the Toxicology and Environmental Research and Consulting unit of The Dow Chemical Company. He previously held positions at the Upjohn Company, the Chemical Industry Institute of Toxicology, and as Assistant Professor of Toxicology at the University of Cincinnati. Across all of these positions he focused on providing consulting and research expertise in support of health risk evaluations of environmental and industrial chemicals and pesticide and pharmaceutical products.

Dr. Bus has served as President of the Society of Toxicology, the American Board of Toxicology and the Academy of Toxicological Sciences, and as a Director of the International Union of Toxicology. He has served on various toxicology-related advisory Boards and Panels including: ILSI-HESI and ILSI Research Foundation; the American Chemical Council Long-Range Research Strategic Science Team; both EPA ORD Board of Scientific Counselors and Chartered Science Advisory Board; the National Academy of Sciences Board on Environmental Studies and Toxicology; the National Institutes of Environmental Health Sciences/National Toxicology Program Board of Scientific Counselors (Technical Reviews Subcommittee); the FDA National Center for Toxicology Research Science Advisory Board; and Board of Directors of the Hamner Institutes. In addition, Dr. Bus served on the Chemical Substances (TLV) Committee of the American Conference of Governmental and Industrial Hygienists, the Program Committee of the Toxicology Forum, and advisory boards of the University of Michigan and Purdue University. He is an Adjunct Professor in the Department of Pharmacology and Toxicology at Michigan State University.

Academic Credentials & Professional Honors

Ph.D., Pharmacology, Michigan State University, 1975

B.S., Medicinal Chemistry, Michigan State University, 1971

International Society for Regulatory Toxicology and Pharmacology International Achievement Award, 2015

International Society for Regulatory Toxicology and Pharmacology International Achievement Award, 2015

Toxicology Forum George H. Scott Memorial Award, 2013

Society of Toxicology Founders Award, 2010

The Dow Chemical Company Responsible Care Award, 2009

Michigan State University, Department of Pharmacology and Toxicology, 2001

KE Moore Distinguished Alumnus AwardRobert A. Scala Award, 1999

Society of Toxicology Achievement Award, 1987

Licenses and Certifications

Board Certified by the American Board of Toxicity (ABT)

First Aid, CPR, and AED trained

Academic Appointments

Adjunct Professor, Department of Pharmacology and Toxicology, Michigan State University, 1987-present

Professional Affiliations

Sigma Xi, Michigan State Chapter, 1975–1983

American Association for the Advancement of Science, 1975–1987

Teratology Society, 1977–present

American Thoracic Society,1978–1992

Society of Toxicology, 1980–present

American Society for Pharmacology and Experimental Therapeutics, 1977-present

American Conference of Governmental and Industrial Hygienists (ACGIH), Full Member, 1996-present

Fellow of the Academy of Toxicological Sciences

Publications

Andersen ME, Gentry PR, Swenberg JA, Mundt KA, White KW, Thompson C, Bus J, Sherman JH, Greim H, Bolt H, Marsh GM, Checkoway H, Coggin D, Clewell HJ III. Considerations for refining the risk assessment process for formaldehyde: Results from an interdisciplinary workshop. Regulatory Toxicology and Pharmacology 2019, 106: 210-223.

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Becker RA, Dreier DA, Manibusan MK, Cox LA (Tony), Simon TW, Bus JS. How well can carcinogenicity be predicted by high throughput "characteristics of carcinogens" mechanistic data. Regulatory Toxicolology and Pharmacology 2017, 90:185-196.

Cruzan G, Bus JS, Banton MI, Sarang S, Waites R, Layko DB, Raymond J, Dodd D, Andersen M. Complete attenuation of mouse lung cell proliferation and tumorigenicity in CYP2F2 knockout and CYP2F1 humanized mice exposed to inhaled styrene for up to 2 years supports a lack of human relevance. Toxicological Sciences, 2017, 159: 413-421.

Andersen ME, Black MB, Campbell JL, Pendse SN, Clewell, HJ, Pottenger LH, Bus JS, Dodd DE, Kemp DC, McMullen PD. Combining transcriptomics and PBPK modeling indicates a primary role of hypoxia and altered circadian signaling in dichloromethane carcinogenicity in mouse lung and liver. Toxicology and Applied Pharmacology 2017, 332: 149-158.

Neal BH, Bus J, Marty MS, Coady K, Williams A, Staveley J, Lamb JC. Weight-of-the-evidence evaluation of 2,4-D potential for interactions with the estrogen, androgen and thyroid pathways and steroidogenesis. Critical Reviews Toxicology 2017, 47: 345-401.

Bus JS. "The dose makes the poison": Key implications for mode of action (mechanistic) research in a 21st century toxicology paradigm. Current Opinion in Toxicology 2017, 3: 87-91

Bus, JS. IARC use of oxidative stress as key mode of action characteristic for facilitating cancer classification: Glyphosate case example illustrating a lack of robustness in interpretative implementation. Regulatory Toxicology and Pharmacology 2017, 86: 157-186.

Bus JS. Analysis of Moms Across America report suggesting bioaccumulation of glyphosate in U.S. mother's breast milk: implausibility based on inconsistency with available body of glyphosate animal toxicokinetic, human biomonitoring, and physico-chemical data. Regulatory Toxicology and Pharmacology 2015; 73: 758-764.

Sweeney LM, Kester JE, Kirman CR, Gentry PR, Banton MI, Bus JS, Gargas ML. Risk assessments for

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Bus JS, Gibson JE. Body defense mechanisms to toxicant exposure. In: Patty's Industrial Hygiene and Toxicology, Vol. IIIB: Biological Responses, 3rd edition. Cralley L, Cralley L, Bus J (eds), John Wiley and Sons, Inc., NY, 1995.

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Gillies PJ, Norton RM, Baker TS, Bus JS. Altered lipid metabolism in 2,5-hexanedione-Induced testicular atrophy and peripheral neuropathy in the rat. Toxicology and Applied Pharmacology 1981; 59:293-299.

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Gillies PJ, Norton RM, White EL, Bus JS. Inhibition of sciatic nerve sterologenesis in hexacarbon-Induced distal axonopathy in the rat. Toxicology and Applied Pharmacology 1980; 54:217-222.

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Bus JS, White EL, Tyl RW, Barrow CS. Perinatal Toxicity and metabolism of n-hexane in Fischer-344 rats after inhalation exposure during gestation. Toxicology and Applied Pharmacology 1979; 51:295-302.

Bus JS, Vinegar A, Brooks SM. Biochemical and physiological changes in lungs of rats exposed to a cadmium chloride aerosol. American Review of Respiratory Disease 1978; 118:573-580.

Gelman BB, Michaelson IA, Bus JS. The effect of lead on oxidative hemolysis -8-2/99 and erythrocyte defense mechanisms in the rat. Toxicology and Applied Pharmacology 1978; 45:119-129.

Bus JS, Aust SD, Gibson JE. Lipid peroxidation as a proposed mechanism for paraquat toxicity. In: Biochemical Mechanisms of Paraquat Toxicity. Autor AP (ed), Academic Press, Inc., New York, pp. 157-176, 1977.

Bus JS, Cagen SZ, Olgaard MK, Gibson JE. A mechanism of paraquat toxicity in mice and rats. Toxicology and Applied Pharmacology 1976; 35:500-513.

Cagen SZ, Janoff AS, Bus JS, Gibson JE. Effect of paraquat (methyl viologen) on liver function in mice. Journal of Pharmacology and Experimental Therapeutics 1976; 198:222-228.

Bus JS, Aust AD, Gibson JE. Paraquat toxicity: Proposed mechanism of action involving lipid peroxidation. Environmental Health Perspectives 1976; 16:139-146.

Bus JS, Preache MM, Cagen SZ, Posner HS, Eliason BC, Sharpe CW, Gibson JE. Fetal toxicity and distribution of paraquat and diquat in mice and rats. Toxicology and Applied Pharmacology 1975; 33:450-460.

Bus JS, Gibson JE. Postnatal toxicity of chronically administered paraquat in mice and interactions with oxygen and bromobenzene. Toxicology and Applied Pharmacology 1975; 33:461-470.

Bus JS, Aust SD, Gibson JE. Lipid peroxidation: A possible mechanism for paraquat toxicity. Research Communications in Chemical Pathology and Pharmacology 1975; 11:31-38.

Bus JS, Gibson JE. Bidrin: Perinatal toxicity and effect on development of acetylcholinesterase and choline acetyltransferase in mice. Food and Cosmetics Toxicology 1974; 12:313-332.

Drach JC, Bus JS, Schultz SK, Sandberg JN. Biotransformation of 9-b-D Arabinofuranosyladenine by rat

and human erythrocytes. Biochemical Pharmacology 1974; 23:2761-2767.

Bus JS, Aust SD, Gibson JE. Superoxide-and singlet oxygen catalyzed lipid peroxidation as a possible mechanism for paraquat (methyl viologen) toxicity. Biochemical and Biophysical Research Communications 1974; 58:749-755.

Bus JS, Gibson JE. Teratogenicity and neonatal toxicity of ifosfamide in mice. Proceedings, Society for Experimental Biology and Medicine 1973; 143:965-970.

Presentations

Bus J. Application of Kinetically-Derived Maximum Dose (KMD) principles to post-hoc interpretation of high-dose specific toxicity studies. Invited Roundtable Session: The Kinetically-Derived Maximum Dose (KMD), a new dimension to the Maximum Tolerated Dose (MTD). Society of Toxicology Annual Meeting, San Antonio, TX, March 14, 2018. (co-developer of session).

Bus, J. Invited presentation/Congressional testimony. United States House of Representatives Hearing "Examining the scientific and operational integrity of EPA's IRIS program", Committee on Science, Space, and Technology's Subcommittee on Environment and Sub-committee on Oversight. Rayburn House Office Building, Washington, D.C., September 6, 2017.

Bus J. Summary of global risk assessment approaches for formaldehyde science - General approaches of the EU, Canada, WHO and the US. Invited Presentation, Formaldehyde Science Invited Experts Workshop: Understanding Potential Human Health Cancer Risk - From Data Integration to Risk Evaluation. University of North Carolina, October 10-11, 2017, Chapel Hill, NC.

Bus J. Rules and Issues in Risk Analysis: Consumer Chemicals. Invited presentation, Risk Analysis Workshop, Institute for Humane Studies and the Mercatus Institute, George Mason University, June 27-28, 2016, Portland, OR.

Bus, J. IARC use of "oxidant stress" mode of action in glyphosate cancer classification evaluation. Invited presentation Glyphosate Task Force Symposium, EuroTox Annual Meeting, Seville, Spain, September 5, 2016.

Bus, J. IARC use of "oxidant stress" mode of action in glyphosate cancer classification evaluation. Invited presentation, Glyphosate Task Force Webinar, November 10, 2016.

Bus J. Introduction and overview. Invited presentation,Toxicology Forum session "Debating the varying criteria for incorporating mechanistic data into cancer classification." Toxicology Forum, Washington, D.C., January 28, 2015.

Bus J. Practical implications in applying in vitro data to inform risk assessment. Invited presentation, Toxicology Forum, Colorado Springs, CO, July 13, 2015.

Bus J. The rise of chemophobia in the modern era: What dose toxicology really have to say? Invited presentation, Joint meeting of the Mid-Michigan AIChE and ACS Chapters, Midland, MI, October 28, 2015.

Bus J. The dose makes of the poison: The bridge from toxicology to understanding real-world health risks. Invited presentation, Plenary Lecture, St John's University Tox Expo, Queens, NY, May 1, 2014.

Bus J. National Academy of Sciences, Plastic marine debris and potential human health risks workshop, invited discussant, Washington, D.C., April 23, 2014.

Bus J. The dose makes of the poison: The bridge from toxicology to understanding real-world health risks. Invited presentation, Monsanto Seminar Series, St Louis, MO, June 17, 2014.

Bus J. Introduction: Mouse lung tumors: Proposal for a unified mode of action for compounds metabolized by CYP2F2. Invited presentation, Toxicology Forum session "Mouse Lung Tumors", Aspen, CO, July 8, 2014 (session co-developer).

Bus J. Epidemiology: Case analysis of pesticides (2,4-D) commonly used in agricultural production. Invited presentation, Argentine Toxicological Association Congress, Comodoro, Argentina, September, 2014.

Bus J and Dellarco V. Risk assessment in the 21st century: Leverage of internationally established frameworks. Invited presentation, ILSI Argentina Workshop, Buenos Aires, Argentina, September, 2014.

Bus J. Introduction: Mouse lung tumors: Proposal for a unified mode of action for compounds metabolized by CYP2F2. Invited presentation, Toxicology Forum, Aspen, CO, July, 2014.

Bus J. A case study showing how toxicology complements epidemiology for informing human risk. Invited presentation, Society of Toxicology Continuing Education course "Epidemiology for Toxicology: What the numbers really mean. Society of Toxicology Annual Meeting, Phoenix, AZ, March 2014.

Bus J. Thresholds for toxicity and public perception. Invited presentation, American College of Toxicology Annual Meeting symposium "4 M's: Mistakes, misuse, mismanagement, misunderstanding…looking at things that have gone wrong in the past: What to learn to plan for the future. San Antonio, TX, November, 2013.

Bus J. Agrochemicals: Current trends on risk analysis, toxicology, and epidemiology. Invited presentation, ILSI Argentina Workshop, Buenos Aires, Argentina, October, 2013.

Bus J. What is the normal environment? Exposure and toxicological considerations. Invited presentation, Santa Fe, NM, 2013.

Bus J. Defining the elements of a holistic weight of evidence approach. Session presentation, Weight of evidence workshop, ILSI North America Technical Committee on Food and Chemical Safety, Miami, FL 2013.

Bus J. The Importance of dose selection. Presentation in session: The carcinogenesis bioassay in 2013: Key elements and best practices, Toxicology Forum, Washington, DC, 2013.

Bus J. Mode of action studies in toxicological hazard and risk assessment: The present and the future. Symposium presentation, CXR Bioscience Symposium, Mechanistic toxicology: preventing and solving problems, Cambridge, MA, 2012

Bus J. FutureTox: Building the road for 21st century toxicology and risk assessment practices. Invited opening remarks to Society of Toxicology Contemporary Concepts in Toxicology program (meeting Co-chair), Arlington, VA, 2012.

Bus J. Opportunities to utilize current understanding of dosimetry for the future. Invited session lecture, Society of Toxicology Contemporary Concepts in Toxicology program FutureTox: Building the road for 21st century toxicology and risk assessment practices, Arlington, VA, 2012. (J Bus co-chair of CCT organizing committee).

Bus J. Bisphenol a: Current toxicology studies and risk to humans. Toxicology Forum Session Panel Discussant, Aspen, CO, 2012.

Bus J. Advocating for evidence-based data evaluation by the National Toxicology Program Report on Carcinogens. Testimony to joint hearing of the US Congressional House Committee on Science and Technology and Small Business Committee, Washington, DC, 2012.

Bus JS. New approaches to toxicology study design: Linking testing dose response and dosimetry to human exposure and health outcomes. Invited workshop presentation, Annual Meeting of the Society of Toxicology, Washington, DC, 2011.

Pottenger LH, Bus JS, Swenberg JA. Background/endogenous DNA Damage: Considerations for dose response and risk assessment. Invited presentation Alliance for Risk Assessment Workshop 3: Beyond Science and Decisions: From problem formulation to dose response assessment, Fairfax, VA, 2011.

Bus J. Use of dose and exposure data to improve design and/or interpretation of test concentrations used in high throughput screening and research assays. Invited presentation, Toxicology Forum, Aspen, CO, 2011.

Bus J The making of a toxicologist in the 21st century: Learning from the past while building for the future. Invited plenary lecture, Society of Toxicology Education Summit, Baltimore, MD, 2011.

Bus J. The OECD extended one-generation test protocol: Evaluation of reproductive, endocrine, and developmental neuro- and immunotoxicity of 2,4-D. Invited presentation, Central States Regional Chapter of the Society of Toxicology, Omaha, NE, 2011.

Bus J Low dose: Getting at biologically relevant exposures: Panel discussion. Invited Panel session chair, ICCA LRI & Health Canada Workshop Advancing Exposure Science to Improve Chemical Safety, Quebec City, CA, 2011.

Bus J Application of new technologies and the future of toxicity assessment for the 21st century. Invited presentation, Northern California Regional Chapter of the Society of Toxicology, Berkeley, CA, 2011.

Bus J New tools toxicology and exposure science: Informing the shape of the dose-response under conditions of low-dose exposures. Invited presentation, Society of Toxicology of Canada Annual Meeting Symposium - Low Dose Effects and their Uses in Risk Assessment: When is an Effect Adverse, CA, 2011.

Bus J Ethylbenzene: A case study using mode of action (MOA) framework assessment for understanding human relevance of cancer response. Invited presentation, Annual Meeting of the Society of Toxicology, Washington, DC, 2011.

Bus J Implications of new technologies in toxicology for toxicity testing and risk assessment in the 21st century. Invited presentation, Morgridge Institute seminar, Madison, WI, 2011.

Bus J. The OECD extended one-generation study: Application to the herbicide 2,4-D. Invited presentation, ILSI Brazil Annual Meeting, Aquas de Sao Pedro, Sao Paulo, Brazil, 2011.

Bus J and Beck B. Weighing complex data in risk decisions: Concepts of evidence-based technology. Invited speaker and session Co-chair, Roundtable session, Annual Meeting of the Society of Toxicology, Salt Lake City, UT, UT, 2010.

Bus J. 21st century approaches to hazard and risk assessment: Opportunities to improve science informed decision-making. Invited presentation, AIHA PCIH Symposium 21st century toxicity testing and human health risk assessment for environmental agents, Ft. Worth, TX, 2010.

Bus J. New tools of toxicology and exposure science: Opportunities for informing low-dose evaluations. Invited presentation, ARA Workshop I, Beyond Science and Decisions: From problem formulation to dose response, Austin, TX, 2010.

Bus J. Opportunities for emerging technologies to impact chemical evaluation policy: Building science-informed decisions. Invited presentation, Dioxin2010, San Antonio, TX, 2010.

Bus J. Low-dose linearity: What can emerging technologies tell us? Invited presentation. Workshop organizer and co-chair, Annual Meeting of the Society of Toxicology, Baltimore, MD, 2009.

Bus J. Why is an understanding of toxicokinetics important? Invited presentation, Annual Meeting of the Society of Toxicology continuing education course Principles and Applications of Toxicokinetics, Baltimore, MD, 2009.

Bus J. Application of new technologies to the future of toxicology: The dose still makes the poison. Invited presentation, Issues session, Annual Meeting of the Society of Toxicology, Baltimore, MD, 2009.

Bus J. Current state and directions of animal toxicity testing. Invited presentation, Joint American Chemical Society, Society of Toxicology and Society for Risk Analysis Congressional science briefing, Washington, DC, 2009.

Bus J The linear no-threshold hypothesis: Recent perspectives from radiation and chemical toxicology. Invited presentation and session chair, Toxicology Forum, Aspen, CO, 2009.

Bus J. Silver book concepts: Perspectives of a toxicologist. Invited presentation, Center for Advancing Risk Assessment Science and Policy Framing Workshop, Research Triangle Park, NC, 2009.

Bus J The way forward and the role of genomics: Chemical industry perspectives. Invited presentation, NIEHS workshop Genomics in cancer risk assessment, Venice, Italy, 2009.

Bus J. Predictability of animal toxicity and carcinogenicity models for human risk: Part III: Application of toxico- and onco-metabolic pathways in animals and humans as the basis for high throughput screening assays. Invited session chair and organizer, Toxicology Forum, Washington, DC, 2009.

Bus J. Human biomonitoring: Translating analytical detection to risk perspectives. Invited presentation, 2nd World Congress on Risk, Society for Risk Analysis, Guadalajara, Mexico, 2008.

Bus J. The use of in vitro data in understanding human health effects and risk. Invited presentation, TestSmart DNT2 symposium, Johns Hopkins University (CAAT), Reston, VA, 2008.

Bus J. Application of new technologies and the future of toxicity assessment for the 21st century. Invited presentation, Annual Meeting of the American College of Toxicology symposium Advancement and current trends in environmental chemical safety assessment, Tucson, AZ, 2008.

Bus J. Occupational exposure limits: ACGIH: Evaluation of control banding. Invited presentation, Toxicology Forum, Aspen, CO, 2008.

Bus J Predictability of animal toxicity and carcinogenicity models for human risk: Part 2, Fishbowl. Invited participant, Toxicology Forum, Aspen, CO, 2008.

Bus J 21st century approaches to toxicity testing, biomonitoring and risk assessment: Advanced technologies session discussant. ICCA LRI Workshop, invited discussant and rapporteur, Amsterdam, Netherlands, 2008.

Bus J. The dose makes the poison: Considerations for modern toxicology. Invited presentation, Fred Sperling Memorial Lecture, Howard University, Washington, DC, 2008.

Bus J. Use of toxicokinetics to improve design and interpretation of industrial chemical and pesticide toxicity studies. Invited presentation, NC3R's Workshop Toxicokinetics and the 3Rs, London, England, 2008.

Bus J. Evaluation of Industry Research Efficiency. Invited presentation, National Academy of

Sciences/National Research Council Workshop on Evaluating the Efficiency of EPA R&D Programs, Washington, DC, 2007.

Bus J DNA methylation and epigenetics: Significance to risk assessment. Invited presentation and Session Chair. Toxicology Forum, Aspen, CO, 2007.

Bus J. Science based decision making in chemicals management: A chemical industry perspective. Invited presentation, Carleton University Expert International Seminar Securing a comparative advantage: The hidden role of effective and efficient regulation, Ottawa, Canada, 2007.

Bus J. How to effectively talk to the public. Invited presentation, Annual Meeting of the Society of Toxicology Continuing Education Course, Charlotte, NC, 2007.

Bus J. What experimental studies (kinectics, metabolism, gene expression etc.) are needed to help in the interpretation of biomonitoring data in a health risk perspective. Invited presentation, Annual Meeting of the Society of Toxicology Biological Modeling Specialty Section, Charlotte, NC, 2007.

Bus J. Pesticides and children: 10 years after FQPA. Invited debate participant, Annual Meeting of the Society of Toxicology, Risk Assessment Specialty Section, Charlotte, NC, 2007.

Bus J Low dose effects of chemicals: Implications for the future of toxicology. Invited presentation, Battelle Pacific Northwest Symposium, Richland, WA, 2007.

Bus J. The collision of hormesis with environmental chemical and natural chemical exposures: Opportunities and challenges for integrating homesis into an improved understanding of chemical health risks. Invited presentation, 4th Annual International Conference on Hormesis: Implications for Toxicology, Medicine and the Environment, Amherst, MA, 2005.

Bus J. Role of biomonitoring in toxicology and molecular epidemiology. Invited presentation, American College of Toxicology Annual Meeting, Indian Wells, CA, 2006.

Bus J. Linking toxicology studies to human biomonitoring: Strategies to assess internal dose in diet and drinking water toxicity studies. Invited presentation, Toxicology Forum, Aspen, CO, 2006.

Bus J. Environmental economics: The impact of toxicology and environmental sciences. Invited presentation, Northwood University, Flint, MI, 2006 and Midland, MI, 2007.

Bus J. Assessing internal dose levels: Interpreting the risks from human biomonitoring, Invited presentation and session chair, Toxicology Forum, Aspen, CO, 2006

Bus J. Review of charge for this meeting. Meeting Organizing Committee and Co-Chair, Society of Toxicology Contemporary Concepts in Toxicology Workshop Charting the Future: Building the Foundation for Mixtures Joint Toxicity and Risk Assessment, Atlanta, GA, 2005.

Bus J. Seeking mid and long term career goals: Perspectives of an industry toxicologist. Invited presentation, Annual Meeting of the Society of Toxicology Career Development Workshop, Baltimore, MD, 2004.

Bus JS. The REACH initiative: Can it realistically be achieved? Invited presentation, National Academy of Science Institutes of Medicine Workshop Global Environmental Health in the 21st Century: From Government Regulations to Corporate Social Responsibility, Washington, DC, 2004.

Bus J, Hammond L. Regulatory progress, toxicology, and public concerns with 2,4-D: Where do we stand after two decades? Invited presentation, 4th International Weed Science Congress, Durban, South Africa, 2004.

Bus, JS. Impacts of chemicals on the elderly: Building on testing and research foundations. Invited presentation, National Academies of Sciences Workshop on Differential Susceptibility of Older persons to Environmental Hazards, Washington, DC, 2002.

Bus J. Industry's approach to cumulative risk assessment under the Food Quality Protection Act for organophosphate pesticides. Invited presentation, Johns Hopkins University Spring Seminar Series, Baltimore, MD, 2002.

Bus J. Dose-response in toxicology: Implications for human risk assessment. Invited lecture, John Hopkins University, Baltimore, MD, 2002.

Bus J. Pesticide effects on birds: Beyond the tip of the iceberg. Invited presentation, American Bird Conservancy Symposium Pesticide Effects on Birds: Beyond the tip of the Iceberg, Laurel MD, 2001.

Bus J. The meaning of mechanisms: Implications for the future of toxicology. Invited presentation, KE Moore Distinguished Alumnus Award, Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI, 2001.

Bus J. Science and its perceptions of Daubert. Invited Panelist, Product Liability Advisory Council, Daubert's Legacy: Courtroom strategies for determining the admissibility of expert testimony. Amelia Island, FL, 1997.

Bus JS. Hyaline droplet-type nephrotoxicity: Its potential role in male rat specific cancer induced by unleaded gasoline and other compounds. Symposium on Non-Genotoxic Carcinogens: Extent of Carcinogenic Hazard, ASPET-SOT Joint Meeting, Baltimore, MD, August 19, 1986.

Bus JS. Animal models in chemical toxicity: Are they always predictive of toxic effects in other species? 78th Annual Meeting of American Society of Animal Science, Kansas State University, Manhattan, KS, July 31, 1986.

Bus JS. Mechanisms: chemical induction of alpha 2u-globulin nephropathy. Toxicology Forum, Aspen, CO, July 15, 1986.

Bus JS. Renal injury and carcinogenesis. Society of Toxicology Continuing Education Course, 24th Annual Meeting of the Society of Toxicology, San Diego, CA, 1985.

Bus JS. Activated oxygen as a product of drug metabolism: Role in drug toxicity. 2nd Annual Meeting of the Drug Metabolism Subsection of the Pharmaceutical Manufacturers Association, Atlanta, GA, September, 1985.

Bus JS. Route of exposure: An important consideration in animal selection and the design of toxicity studies. Monsanto Toxicology Symposium, St. Louis, MO, October 31, 1985.

Bus JS. Workshop on neurobehavioral effects of solvents. Rapporteur for Session: Study of Solvent Effects in Animals, Raleigh, NC, October 14-16, 1985.

Bus JS. Participant: Hydrocarbon Nephrotoxicity Scientific Advisory Group, The Proctor and Gamble Company, September 25, 1985.

Bus JS. Toxicity and metabolism of carbon disulfide. 2nd International Conference on the Neurotoxicology of selected chemicals: Acrylamide, xexacarbons, IDPN and carbon disulfide, Chicago, IL, September, 1983. (Bus J, co-chairman of hexacarbon and carbon disulfide symposiums).

Bus JS. Oxygen activation and lipoperoxidative mechanisms of toxicity of pesticides and other xenobiotics. Invited poster and discussion, 5th International Congress of Pesticide Chemistry (IUPAC), Kyoto, Japan, 1982.

Bus JS, Gibson JE. Mechanisms of free-radical-mediated toxicity. Annual Meeting of American Chemical Society, Las Vegas, NV, 1982.

Bus JS. Biochemical mechanisms underlying the toxic action of chemicals. Symposium on Structure-Activity Relationships in Toxicology, Chemical Industry Institute of Toxicology, and Environmental Protection Agency, Raleigh, NC, 1981.

Bus JS, Gibson JE. Role of activated oxygen in chemical toxicity. ASPET Workshop on Drug Metabolism and Toxicity, Houston, TX, 1980.

Bus JS, Gillies PJ. Role of lipid metabolism in hexacarbon neuropathy. Symposium on Unresolved Mechanisms of Toxicity, Annual Meeting of SOT, Washington, DC, 1980.

Bus JS. Role of lipid peroxidation in paraquat toxicity. Symposium on Biochemical Mechanisms of Paraquat Toxicity, lowa City, IA, 1976.

Bus JS. Paraquat toxicity: A proposed mechanism of toxicity involving lipid peroxidation. SOT Symposium on Target Organ Toxicity, Lung, Cincinnati, OH, 1975.

Research seminars at various institutions including: Duke University, Durham, NC; Michigan State University, E. Lansing, MI; Univ. of Kansas, Lawrence, KS; New Jersey Medical School, Newark, NJ; Univ. of Cincinnati, Cincinnati, OH; Vanderbilt University, Nashville, TN; Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; General Motors Research Labs, Warren, MI; Exxon Corp., REHD, E. Millstone, NJ; Mobil Oil Corp., Princeton, NJ; Dow Chemical Co., Midland, MI; Merck, Sharp and Dohme, West Point, PA; U.S. Environmental Protection Agency, Washington, DC; Imperial Chemical Industries, Ltd., Macclefield, Cheshire, U.K.; Mitre Corp., McClean, VA; University of Texas, Austin; Medical College of Ohio, Toledo, OH; Purdue University, E. Lafayette IN; Wayne State University, Detroit, MI.; Texas A&M University, College Station, TX; University of Washington, Seattle, WA.

Abstracts (Posters/Platform)

Von Cott A, Freficks M, Hastings C, Honavar N, Flick B, Fabian E, Badding M, Gollapudi B, Bus J, van Ravenzwaay B. Mode-of-Action Analysis for Uterine Adenocarcinomas Associated with High Dietary Doses of the Insecticide Afidopyropen. Poster presentation, Society of Toxicology Annual Meeting, San Antonio, TX, March 2018.

Cruzan G, Bus J, Banton M, Sarang S, Waites R, Layko D, Raymond J. Mouse-specific CYP2F2 metabolism is only reasonable mode of action responsible for short- and long-term lung toxicity and tumorigenicity of styrene. Poster presentation, Society of Toxicology Annual Meeting, Baltimore, MD, March, 2017.

Bus JS, Maurissen JM, Charlap JH, Picut CA, Collins R, Bevan CJ, Lamb JC IV. An extended one-generation reproduction and developmental neurotoxicity (DNT) drinking water study (OECD 443) of ethylene dichloride (EDC) in Crl:CD(SD) rats. Poster presentation, Society of Toxicology Annual Meeting, New Orleans, LA, March 2016.

Cruzan G, Bus JS, Banton MI, Sarang SS, Waites R, Layko D, Raymond J. No lung pathology in mice from twelve months of exposure to styrene in the absence of Cyp2f2 metabolism. Poster presentation, Society of Toxicology Annual Meeting, New Orleans, LA, March, 2016.

Andersen ME, Cruzan G, Bus JS, Banton MI, Sarang SS, Black M. Using transcriptomics and cell proliferation to evaluate mode of action of ethylbenzene in wild-type, cyp2f2 knockout and cyp2f2 humanized mice exposed for 5 days. Poster presentation, Society of Toxicology Annual Meeting, New Orleans, LA, March, 2016.

Cruzan G., Bus J, Banton M, Sarang S, Dodd D, Black M, Andersen, M. Mouse lung genomic responses in styrene treated wild-type, CYP2F2 knockout and CYP2F1 humanized mice support the low human relevance of mouse-specific lung toxicity and tumorigenicity. Poster presentation, Society of Toxicology Annual Meeting, San Diego, CA, 2015.

Cruzan G, Bus J, Hotchkiss J, Sura R, Banton M, Sarang S. Studies of styrene, styrene oxide and 4-hydroxystyrene toxicity in CYP2F2 knockout and CYP2F1 humanized mice supports the lack of human relevance for mouse lung tumors. Poster presentation, Annual Meeting of the Society of Toxicology, San Antonio, TX, 2013.

Pottenger L, Swenberg JA, Bus JS. Endogenous DNA damage: Considerations for dose response. Platform presentation, Annual Meeting of the Society of Toxicology, San Francisco, CA, 2012.

Sura R, Hotchkiss J, Krieger S, Bus, J, and Cruzan G. Mode of action approach for styrene-induced mouse lung tumors and its relevance to human risk assessment. Poster presentation, Annual Meeting of the Society of Toxicologic Pathologists, Boston, MA, 2012.

Cruzan G, Bus J, Hotchkiss J, Banton M, Sarang S. Mode of action of styrene mouse lung tumors: No lung toxicity in CYP2F1 humanized mice supports lack of human relevance. Poster presentation, Annual Meeting of the Society of Toxicology, San Francisco, CA 2012.

Cruzan G, Bus JS, Ding X, Hotchkiss J, Harkema JR, Gingell R. No lung toxicity from styrene in CYP2F2 knockout mice. Poster presentation, Annual Meeting of the Society of Toxicology, Washington, DC, 2011.

Bus JS, Neal BH, Zablotny CL, Yano BL, Saghir SA, Marty SM. 2,4-Dichlorophenoxyacetic acid (2,4-D): Evaluation of systemic toxicity in a dietary extended one-generation study in CRL:CD(SD) rats. Poster presentation, Annual Meeting of the Society of Toxicology, Salt Lake City, UT, UT, 2010.

Neal BH, Bus JS, Zablotny CL, Yano BL, Saghir SA, Marty SM. 2,4-Dichlorophenoxyacetic acid (2,4-D): Evaluation of reproductive/ endocrine endpoints in a dietary extended one-generation study in CRL:CD(SD) rats. Poster presentation, Annual Meeting of the Society of Toxicology, Salt Lake City, UT, UT, 2010.

Andrus AK, Zablotny CL, Yano BL, Yano BL, Bus JS, Neal BH, Marty SM. 2,4-Dichlorophenoxyacetic acid (2,4-D): Evaluation of developmental neurotoxicity (DNT) and developmental immunotoxicity (DIT) in a dietary extended one-generation study in CRL:CD(SD) rats. Poster presentation, Annual Meeting of the Society of Toxicology, Salt Lake City, UT, UT, 2010.

Li AA, Maurissen JP, Burnett JF, Foss JA, Freshwater L, Gurman R, Peachee V, Hong S, Stump D, Bus JS. Oral gavage subchronic neurotoxicity and inhalation subchronic immunotoxicity studies of ethylbenzene in the rat. Poster presentation, Annual Meeting of the Society of Toxicology, Salt Lake City, UT, 2010.

Dong J, Gao R, Bus JS. New chemical notification in China: Perspectives from an industry toxicologist. Poster presentation, Annual Meeting of the Society of Toxicology, Salt Lake City, UT, 2010.

Saghir SA, Marty MS, Clark AJ, Zablotny CL, Bus JS, Perala AW, Yano BL, Neal BH. A dietary dose range-finding and toxicokinetic (TK) study of 2,4-dichlorophenoxyacetic acid (2,4-D) in adult Crl:CD(SD) rats and their offspring: I. Toxicokinetics. Poster presentation, Annual Meeting of the Society of Toxicology, Baltimore, MD, 2009.

Marty MS, Saghir SA, Zablotny CL, Clark AJ, Perala A, Yano BL, Bus JS, Neal BH. A dietary dose range-finding toxicokinetic (TK) study on 2,4-dichlorophenoxyacetic acid (2,4-D) in adult Crl:CD(SD) rats and their offspring: II. Toxicity. Poster presentation, Annual Meeting of the Society of Toxicology, Baltimore, MD, 2009.

Marty MS, Zablotny CL, Bus JS, Passage JK, Yano BL, Neal BH. Applying trigger criteria for breeding a second generation in the extended one-generation ACSA study design: A practical example using 2,4-dichlorophenoxyacetic acid in Crl:CD(SD) rats. Poster presentation, Annual Meeting of the Society of Toxicology, Baltimore, MD, 2009.

Price PS, Arnold SM, Fontaine DD, Bus JS. Alternative explanation of reported increases in low metabolism of benzene. Poster presentation, Benzene symposium, Munich Germany, 2009.

Kirman C, Sweeney L, Bus J, Gargas M. Mode of action (MOA) evaluations and derivation of a cancer reference value for ethylbenzene. Poster presentation, Annual Meeting of the Society of Toxicology, Seattle, WA, 2008.

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Toxicology and Applied Pharmacology, Acquisition Specialty Editor, 2003-2012

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